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Voir comme une famille inuit: la relation entre la forme de la maison et la culture dans le nord canadien

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L'influence de Marcel Mauss
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Aller au sommaire du numéro

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Résumé de l'article

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Seeing like an Inuit family: The relationship between house form and culture in northern Canada

Peter C. Dawson*

Résumé: Voir comme une famille inuit: la relation entre la forme de la maison et la culture dans le nord canadien

Dans son classique *Esssai sur les variations saisonnières des sociétés Eskimos*, Marcel Mauss a demontré qu'un fort rapport existe entre l'organisation spatiale des formes traditionnelles des maisons des Inuit et la morphologie sociale des familles qu'elles abritent. Ces observations devancent les ouvrages plus récents en anthropologie qui examinent comment des processus culturels sont reflétés dans, et soutenus par, l'environnement bâti. De telles idées sont importantes en considérant les effets des programmes de logement d'après-guerre sur des familles inuit de l'Arctique canadien. Durant les années 60, des tentatives ont été faites pour restructurer les habitudes des familles inuit par des cours en économie domestique et par l'architecture euro-canadienne. Cependant, des observations ethnographiques récentes de ménages inuit indiquent que beaucoup continuent à utiliser leurs maisons de manières traditionnelles. De cette façon, les familles inuit essayent de s'adapter à des habitations conçues autour de concepts du ménage et de la vie familiale provenant d'une autre culture. Les idées de Mauss sont donc un rappel poignant qu'il faut tenir compte des facteurs culturels en développant la politique du logement autochtone.

Abstract: Seeing like an Inuit family: The relationship between house form and culture in northern Canada

In his classic essay *Seasonal Variations of the Eskimo*, Marcel Mauss argued that a strong relationship exists between the spatial organisation of traditional Inuit house forms and the social morphology of the families they shelter. These observations anticipate later works in anthropology that examine how cultural processes are reflected in, and sustained by, the built environment. Such ideas are important when considering the effects of post-war housing programs on Inuit families in the Canadian Arctic. During the 1960s, attempts were made to restructure the routines of Inuit families through Euro-Canadian architecture and home economics classes. Recent ethnographic observations of Inuit households in operation, however, reveal that many continue to use their houses in traditional ways. By doing so, Inuit families are attempting to adapt to dwellings designed around another culture's concept of homemaking and family life. Mauss's ideas are therefore a poignant reminder of the need to take cultural factors into account when developing aboriginal housing policy.

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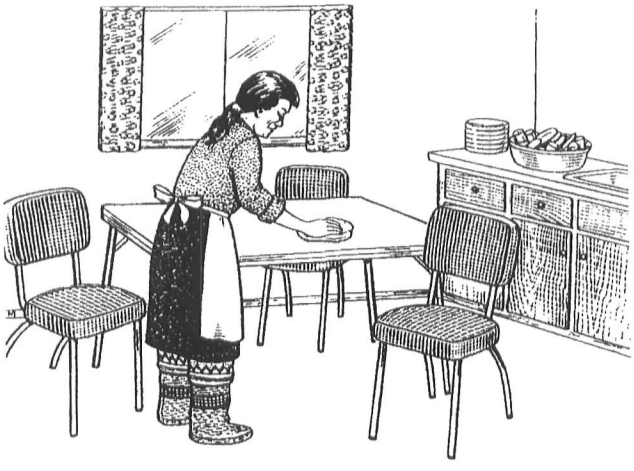
Introduction

Marcel Mauss was arguably the first anthropologist to draw attention to the relationship between house form and culture in Inuit and Eskimo societies. These observations were contained in an essay entitled *Seasonal Variations of the Eskimo*. The essay was published in 1906, roughly six decades before Inuit in the Canadian Arctic were introduced to western-style housing, during a time Damas (2002) has referred to as the settlement era. High modernist ideas, based on the notion that human life could be improved through technology and progress, inspired many government programs in the Canadian Arctic during this period. Social housing programs, and the movement of Inuit into settled communities, were prominent among these modernist schemes. However, the degree to which they actually improved the lives of Inuit is debatable. It was certainly true that families living in settled communities had better access to outside supplies. Euro-Canadian houses also made life easier for those Inuit involved in wage labour employment, and Qallunaat schooling (Tester 2006: 240). However, because these new houses had not been designed with the lifestyles of Inuit in mind, families often used them as if they were traditional dwellings. Seal oil lamps, for example, were used to offset the high annual heating costs of oil stoves and furnaces (Condon 1996: 140-141). Families were also observed butchering seals in living rooms, storing the meat in bathtubs, and repairing mechanised hunting equipment in living rooms, bedrooms, and kitchens, all of which created obvious health risks (Bruce 1969; Collings *et al.* 1998; Condon 1996; Thomas and Thompson 1972).

In response, home economists, armed with educational materials, were sent to the Arctic to try and alter Inuit patterns of homemaking, so that they matched those of Euro-Canadian families (Figure 1) (Department of Indian Affairs and Northern Development 1968). While these experiences did resonate among some members of Inuit society, many families continued to use the spaces in their homes in ways that outsiders often found unorthodox. Currently, the Canada Mortgage and Housing Corporation, and the Inuit-run Nunavut Housing Corporation, are attempting to develop new house designs and housing policies that better accommodate the lifestyles and cultural values of contemporary Inuit families. Unfortunately, these initiatives have been hindered by funding shortages and a lack of baseline information on the spatial requirements of Inuit families, many of whom currently practice a mix of traditional and Western lifestyles (Dawson 2003, 2004).

Mauss's observations of the necessity of 'fit' between house form and household raise several interesting questions: What happens when individuals are forced to inhabit houses that are designed around another culture's concepts of family life? Do they alter their lives to match those of their new architectural surroundings? Or do they rigidly adhere to their traditional routines and practices in order to retain their cultural identity? The purpose of this paper, therefore, is to examine the extent to which Inuit families continue to use their houses in traditional ways. Ethnoarchaeological fieldwork, undertaken during the summer of 2002 in the community of Arviat (Nunavut) was used to document the activities of a sample of Inuit households over a period of three months. The domestic practices of Inuit families were then charted and quantified using



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Cleaning the table before mealtime.

Figure 1. An instructional cartoon used in home economics classes to illustrate Euro-Canadian home-making skills to Inuit families, ca. 1968 (source: Department of Indian Affairs and Northern Development 1968).

an analytical technique called space syntax analysis. Space syntax maps differences in room accessibility within a dwelling, allowing the researcher to examine how domestic practices are structured relative to culturally derived concepts of public and private space (Bafna 2003; Batty and Rana 2004; Hanson 1998; Hillier 1996; Hillier and Hanson 1984; Hillier *et al.* 1996). Results indicate that Inuit households continue to use space in accordance with the requirements of traditional activities, and the collective nature of their domestic lives. These patterns of space use appear unorthodox to outsiders because the houses that Inuit currently occupy have been designed around another culture's concept of home-making and family life.

There are many reasons for housing shortages in Canadian Arctic communities, including high birth rates, and the increasing presence of nuclear family households. An absence of culturally appropriate housing further exacerbates these shortages because Euro-Canadian dwellings are easily damaged by many traditional practices. Consequently, Mauss's observation that architecture mirrors social life has important implications for the development of northern Aboriginal housing policy in the 21st century.

The spatial logic of Inuit culture

Studies of the relationship between space and culture have a remarkable time depth in archaeology and anthropology, with some of the earliest research being carried out in the 19th century. In 1881, for example, Lewis Henry Morgan published the now classic monograph *Houses and House-Life of the American Aborigine*. Morgan's book concerned itself primarily with examining the relationship between social structure and space in North American aboriginal societies. In outlining the consanguinity between the domestic unit and the use of space within dwellings, Morgan concluded that the house forms he had analysed from an exhaustive number of ethnographic examples reflected an adaptation to the collective economic endeavours of several co-resident families. Morgan (1881: 105) referred to this as "communism in living."

Like Morgan, Marcel Mauss (1906) also saw a strong relationship between the built environment and social life. This idea was borne out of Mauss's interest in the effects of seasonal variation on human societies. The Inuit were ideally suited for such a study because seasonal variations were so pronounced in circumpolar regions. Mauss conducted his research in collaboration with the French anthropologist Henri Beuchat[1]. Mauss began a comprehensive study of the large, but scattered literature that had been collected on Inuit societies by German, English, Danish, and Russian explorers and researchers. This included classic ethnographies by Franz Boas (1888) on Baffin Island and E.W. Nelson (1899) in western Alaska. Using these data, Mauss formulated the argument that Inuit social morphology was based upon seasonally varying patterns of population aggregation and dispersal. During the summer months, Inuit groups spread out across the landscape as nuclear families structured along patrilineal lines (Mauss

1 Beuchat later died in the *Karluk* disaster on Stefansson's Canadian Arctic Expedition in 1914.

1979: 63). These autonomous nuclear families later coalesced into much larger households at centralised locations during the winter. Within these larger households, leadership was designated not by birthright, but by personal characteristics such as age and hunting ability (*ibid.*: 63).

While such patterns of aggregation and dispersal seemed to match the seasonally specific resources exploited by Inuit families, Mauss was careful to stress that this process was facilitated by the moral, judicial, and ideological forms of Inuit social life (*ibid.*: 64). Religious life was intensified during the winter months, suggesting that the ceremonies, feasts, and festivals held during this period functioned to promote solidarity within the group (*ibid.*: 59). During the winter, households were also bound together through moral ties and economic relations that stressed communalism in living (*ibid.*: 64). The sharing of food in accordance with specific rules, and collective rights that existed over many household items, for example, served to ensure that the group remained an integrated and cohesive unit.

A thorough survey of variations in circumpolar architecture led Mauss to conclude that the changing social morphology of Inuit families was reflected in the structure (layout) of many traditional Inuit house types (*ibid.*: 37). Summer tents were small, and lacked interior partitions to separate family from guests. As a result, the family lived perfectly united within the dwelling, which could be easily erected and dismantled for travel (*ibid.*: 44). Winter dwellings, on the other hand, were jointly owned and occupied by several families, which formed the resident household (*ibid.*: 44).

Mauss observed that communal spaces were common to many types of winter dwellings. Among the Inuvialuit, for example, families occupied cruciform-shaped semi-subterranean houses with separate sleeping platforms that opened onto a shared common area (*ibid.*: 41). Similarly, the snow houses used in many areas of the Canadian Arctic were often composite in form, with two or three domes connected to a common passage or communal dance house (*ibid.*). In Alaska, specialized structures called *kashims* played an essential role in the collective nature of social life in winter settlements. The *kashim* was a large ceremonial house that served as the communal core of the village (Lee and Reinhardt 2003; Savelle 2002; Sheehan 1997; Spencer 1959). *Kashims* functioned as the center of the men's world, where they would gather to work and visit. They were also used for sweat baths, council meetings, shamanistic activities, and funerals. The spatial arrangement of *kashims* facilitated these cooperative activities through its central hearth, lack of internal compartments, and use of benches in place of sleeping platforms (*ibid.*: 44).

Mauss concluded that the intensive use of communal space was a material expression of the importance of collective life in Inuit societies. He dismissed more straightforward explanations for this phenomenon, including the suggestion that communal winter houses simply reflected the need to retain heat, or to conserve building materials and food. While Mauss regarded such factors as important influences, he argued that they were insufficient to account for the total phenomenon (*ibid.*: 53). In other words, they explained how communal forms of living might have

occurred, but not the level of intimacy involved (*ibid.*: 56). Mauss pointed out that groups like the Chipewyan lived in similar environments as the Inuit, yet they did not use communal houses (*ibid.*). Likewise, functional explanations failed to shed light on why individuals chose to connect the domes of their snow houses in the central Canadian Arctic, or used *kashims* in Alaska. To Mauss, communal areas were essential features of winter houses because they provided families with opportunities to interact as they moved through the routines and practices of daily life.

Mauss's observations on the social dimensions of circumpolar architecture were extraordinary for their time, and Lévi-Strauss has written of the remarkable "modernity" of his thought (Fox in Mauss 1979: 11). In many ways, they anticipate the ideas of later researchers, who point out that indigenous societies are able to ensure that built environments suit their needs and requirements perfectly because they design and construct buildings for themselves. (Lawrence and Low 1990; Parker-Pearson and Richards 1994; Preston Bleir 1987; Rapoport 1969). The challenges faced by those charged with the implementation of social housing programs in the Canadian Arctic over the past five decades are therefore a poignant reminder of the importance of these ideas.

A brief history of housing in the Canadian Arctic

In his book *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (1998) James Scott defines high modernism as "a strong, one might even say muscle-bound, version of self-confidence about scientific and technical progress, the expansion of production, the growing satisfaction of human needs, the mastery of nature (including human nature), and above all, the rational design of social order commensurate with the scientific understanding of natural laws" (Scott 1998: 4). Scott blames high modernism for turning urban planning into a form of social engineering, where it was believed that the lives of people were made better through buildings and communities that were planned and orderly. He cites examples such as Soviet collectivisation, and compulsory villagisation in Tanzania, to demonstrate that great harm can result from such projects (*ibid.*). According to Scott, such high modernist schemes to improve human life, while well intended, ultimately fail because they result in the loss of local knowledge (*ibid.*: 6).

On the surface, the introduction of Euro-Canadian architecture in the Canadian Arctic could be viewed as an example of high modernism gone awry. Many Canadian government administrators, including northern service officers, were committed to the basic tenets of modernity, in part due to their experiences living through two world wars, and a great depression. Consequently, the modernist schemes they implemented were not so much about acculturation, as they were about alleviating poverty, and the dangers many Euro-Canadians associated with traditional Inuit life (Tester 2006: 236).

In the years between the wars, the Canadian government had practised a policy of benign neglect in its dealings with the Inuit, which had been achieved through a

strategy of population dispersal. By discouraging the centralisation of Inuit in settlements, and supporting the continued use of out-camps on the land, the Canadian government hoped that Inuit would remain economically self-sufficient and avoid dependency (Damas 2002; Duffy 1988; Nixon 1984; Tester and Kulchyski 1994). The emerging strategic military importance of the Canadian Arctic during the Cold War era, coupled with the disastrous and much publicised starvation in the Kivalliq region during the winter of 1957-58, threw this policy into question (Damas 2002; Tester and Kulchyski 1994).

The construction of Distant Early Warning (DEW) line stations at locations such as Cambridge Bay, Coral Harbour, and Churchill, brought wage labour jobs, and an almost limitless supply of building materials, such as scrap lumber, to the Inuit. Out of necessity, many families began to build "shanty-style" dwellings around the perimeters of DEW line stations and military bases (Department of Northern Affairs and Natural Resources 1960: 74-80; Duffy 1988: 24; Nixon 1984: 128). Similar types of self-made houses emerged on the edges of settlements where Inuit children were now attending Qallunaat schools. Observations made by Tester (2006) and other researchers during the 1960s and 1970s suggest that some of these dwellings were remarkably well built and comfortable. Nevertheless, most southern visitors were shocked by the living conditions of the Inuit they encountered, and many considered these self-built houses to be substandard (Damas 2002: 120; Nixon 1984: 128; Tester 2006: 236). This was partially due to the fact that methods of house construction varied dramatically between communities. In some areas, for example, Inuit families lived in snow houses lined with boards, plywood, canvas, and paper (Graburn 1969: 164-165). The fact that imported cotton clothes and rubber boots were now used as substitutes for warmer traditional clothing only compounded the problem (Department of Northern Affairs and Natural Resources 1960: 74-80; Duffy 1988: 24; Nixon 1984: 128).

Concerns that modernisation projects would increase Inuit dependency on the welfare state placed many northern officials in a catch 22 situation (Tester 2006: 233). Although officials had identified housing as an area of concern, the implementation of housing programs in the Canadian Arctic had been delayed because of concerns over the creation of dependency. These circumstances quickly changed in 1959, with the publishing of a report entitled *Eskimo Mortality and Housing*, which argued that substandard housing conditions in the Canadian Arctic were exacting a huge toll on Inuit health (Department of Northern Affairs and Natural Resources 1960). General illness within the Inuit population, and high instances of infant mortality, were attributed to the continued use of self-built houses. The report concluded that Inuit children faced two stark choices, "either gastro-enteritis in the shack, or pneumonia in the tent" (Damas 2002: 120). In response, the Department of Northern Affairs and Natural Resources embarked upon a series of "crash" housing programs throughout the Canadian Arctic (Buchanan 1979: 25; Redgrave 1986: 50; Thomas and Thompson 1972: 1; Thompson 1969). The perception that housing was urgently needed precluded any in-depth consultation with Inuit about their requirements. Local knowledge was excluded from the design process, meaning that southerners, with little cognisance of

either Inuit culture or the arctic environment, were left to make critical decisions regarding design, furnishings, and construction materials[2].

Attempts were made early on to design structures that were culturally familiar to Inuit. These included a type of *iglu* manufactured from 6" translucent Styrofoam blocks held together by an adhesive seal, and circular double-walled canvas tents insulated with moss (Department of Northern Affairs and Natural Resources 1960: 67). The high cost of building houses in the north, however, meant that it was cheaper to use existing "off the shelf" designs that were easily transportable and inexpensive to build. Experimentation was also hindered by national building codes and standards, which, to a certain extent, determined what Inuit houses had to look like. As a consequence, many culturally sensitive approaches to house design had been abandoned by the end of the 1950s, in favour of building houses that were basically facsimiles of those used in southern Canada (Damas 2002: 120)[3].

Defining Inuit patterns of space use in Euro-Canadian houses

The previous section demonstrates that Scott's (1998) concept of local knowledge was more or less left out of early northern housing programs. But how does one acquire the knowledge necessary to build houses that are culturally sustaining? One method might be to observe how Inuit families have grafted their traditional practices onto the floor plans of the houses they currently inhabit. Michel de Certeau (1984) argues that social science has yet to develop a methodology for examining how people re-appropriate aspects of culture, such as technology, in their everyday lives. According to him, individuals render their world "habitable" by engaging in tactical behaviours designed to evade the influences of recognised authorities (de Certeau 1984). If Western houses map Euro-Canadian concepts of family life, then we might expect Inuit families to use space in ways that diverge from this cultural norm. These divergences may represent tactical behaviours used to render Euro-Canadian houses habitable. If so, then these behaviours likely hold important clues for designing culturally sustaining housing for Inuit families. The use of space is an emergent phenomenon, defined by the rhythm of family life. For these reasons, it is often difficult for individuals to explain, or rationalise, the spatial behaviours they engage in. Consequently, a strictly observation-based approach was intentionally used to map and record the spatial

2 Inuit also had to adapt to the bureaucratic and administrative structures that accompanied their new government houses. In 1965, the Canadian Government entered into a landlord-tenant relationship with Inuit through the Eskimo Rental Housing Program (Buchanan 1981:14; Duffy 1988: 36; Nixon 1984: 146). The program scaled rents to match the income of each family, and great pains were taken to explain the concept of rent and servicing costs to Inuit tenants. While an in-depth discussion of the repercussion of this lies beyond the scope of this paper, "rent" and "mortgage" still remained poorly understood concepts among Inuit families as late as the mid-1980s (Redgrave 1986: 126).

3 In 1973, a study was undertaken among Inuit families in Puvirnituuq (Nunavik) about their perceived housing needs. In addition to interviews, researchers utilised models of houses with movable walls to elicit information for building culturally appropriate housing. The report concluded that Inuit should be trained to build houses for themselves rather than continue to live in government houses that were seen as culturally inapropriate (Larochelle *et al.* 1974).

behaviour of Inuit families over a set period of time. These results were then compared against the spatial configurations of the Euro-Canadian houses they inhabit.

Measuring the spatial configuration of northern houses

Human societies have different attitudes about the nature of public versus private space. This is often reflected in how they use *hot* and *cold* spaces within their houses. *Hot* spaces attract public activities because they are integrated into the floor plan, and are easily accessed from other areas of the house. The communal spaces described by Mauss in traditional Inuit winter houses are examples of *hot* spaces, as are living rooms and kitchens in most Euro-Canadian houses. *Cold* spaces, on the other hand, attract private activities because they are segregated and less accessible. Bedrooms, bathrooms, and utility rooms are excellent examples of these types of spaces in Euro-Canadian homes. *Hot* and *cold* spaces can be identified in the floor plan of any building using a technique called Space Syntax analysis.

Space Syntax analysis was developed in the 1970s as a way of formalising the relationship between house form and space use by means of graph theory (Hillier and Hanson 1984). Typically, the geometric properties of buildings are quantified using a positional measure called integration. Integration compares the accessibility of rooms in a building to an idealised graph where all spaces are equally accessible. This concept is illustrated in Figure 2. In the spatial configuration (A), each room can be accessed from two adjoining spaces, so they all share the same level of integration. In spatial configuration (B), however, the arrangement is changed. While rooms 2 and 3 can be accessed from two adjacent spaces, rooms 1 and 4 can only be entered from a single neighbouring space. This means that 2 and 3 share a higher level of integration than 1 and 4, which are more segregated within the configuration. Observational studies of human spatial behaviour demonstrate that such differences in accessibility determine how people are likely to distribute themselves in space. A 1995 study of visitor behaviour in London's Tate Gallery, for example, showed excellent correlations between observed patterns of pedestrian movement and the integration values of various areas within the building (Conroy Dalton 2001). Within 10 minutes of entering the galleries, for example, movement traces showed a marked tendency towards the more integrated left side of the building plan (Hillier *et al.* 1996: 9).

Several space syntax computer software packages are currently available for calculating the numerical integration values of rooms from architectural plans. For the purposes of this study, a program called Pesh was used to measure integration values for various northern house models using blueprints obtained through archival research at the Nunavut Housing Corporation in Arviat, and the Canada Mortgage and Housing Corporation in Ottawa. Figures 3a and 3b provide examples of the resulting integration maps for two of these northern house designs: an Access 3-bedroom house (left) and a 3-bedroom Coldstream house (right). Pesh 'tones' each area within the house according to its integration value, and along a sliding scale from black (most integrated) to white (least integrated). The graphs used in this study reveal two attributes common to Euro-

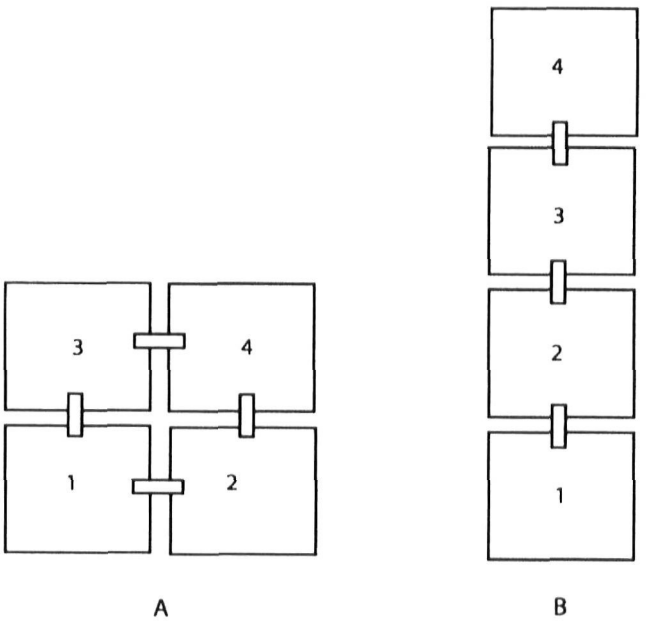

Figure 2. Two different configurations of space that alter the accessibility of rooms 1 and 4.

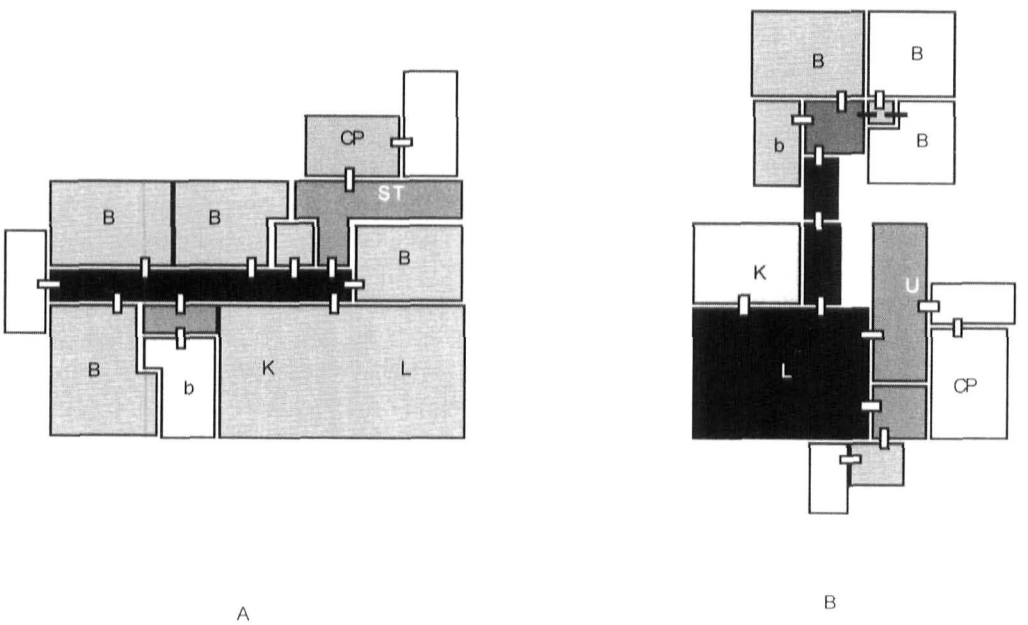

Figure 3. Spaces (rooms) shaded according to integration. Black indicates high integration, with values decreasing along a sliding scale to white, which indicates low integration. (L) Living room; (K) Kitchen; (B) Bedroom; (b) Bathroom; (ST) Storage room; (U) Utility room; (CP) Cold porch.

Canadian houses: they are highly compartmentalised, and integration values vary considerably from one location to the next. Such arrangements of space generally favour the dispersal of people and their activities to particular sectors of the house, and emphasise the use of private over public space.

Recording the daily activities of Inuit families

During the next phase of the project, the daily activities of 47 Inuit families living in the community of Arviat, Nunavut, were documented over a three-month period during the summer of 2002. Visits to families were made randomly, and at varying times of the day, so that the range of activities performed by households could be captured. Upon entering each house, all moving and stationary activities that were occurring at that moment were recorded. Secluded spaces, such as bedrooms and bathrooms, were visited when it was considered appropriate to do so. This usually involved situations such as children's bath time (bathrooms), and teen gatherings (bedrooms). Standard categories of activity include socialising, sewing, maintenance of hunting and fishing equipment, craft making, cooking, eating, storing, and personal needs. These main categories are comprised of a variety of specific actions that are listed in Table 1.

The family activities recorded were then transposed onto the integration maps of their respective houses. Each category of activity was assigned the integration value of the room where it was most frequently observed. These activity values were then averaged and graphed in Figure 4. Activities are arrayed along the x-axis of the graph, and the averaged integration values are arrayed along the y-axis. Values below 1 tend towards increasing integration, while values above 1 tend towards increasing segregation (Hillier and Hanson 1984: 113). The observed frequency of each activity category is listed as a percentage, and appears just below the trend line. Graphing the data in this way has a number of advantages; it quantifies and summarises trends in Inuit spatial practices, and it provides a means of establishing the degree of fit between these spatial practices and the layouts of Euro-Canadian houses.

Linking domestic activities to *hot* and *cold* spaces

Graphing the activity data reveals that socialising was the most frequently observed category of activity in the study (Figures 4 and 5). Such activities were recorded primarily in highly integrated (*hot*) areas because they are easily accessible and attract people. Figure 4 shows that Inuit families intensively use integrated spaces, indicating that cooperative interaction remains an essential component of their economic and social lives. Individuals within extended families, for example, will often share food, labour, equipment, and information. In Arviat, no single person possesses everything necessary to live off the land and sea because few can afford to purchase and maintain items such as boats and all-terrain cycles by themselves. Consequently,

Table 1. Family activities documented during fieldwork in Arviat, Nunavut.

ACTIVITY	ACTIONS	ACTIVITY	ACTIONS
Cooking	a) Char	***Eating***	a) Caribou meat
	b) Caribou		b) Dried caribou meat
	c) Seal		c) Char
	d) Beluga		d) Dried char
	e) Bear		e) Beluga
	f) Narwhal		f) Narwhal
	g) Bannock		g) Bannock
	h) Cooking marrow		h) Country food
	i) Store-bought food		i) Tea/Coffee
	j) Miscellaneous country food		j) Store-bought food
Hunting/Fishing	a) Butchering animals	***Storing***	a) Hides/Hide clothing
	b) Cleaning char		b) Store bought clothing
	c) Drying char		c) Hunting equipment
	d) Preparing hides		d) Sewing equipment
	e) Making dry meat		e) Tools
	f) Splitting bone for marrow		f) Toys
			g) Caribou meat
Sewing	a) Hide		h) Char
	b) Cloth		i) Bird eggs
			j) Sea mammal
Crafts	a) Carving		k) Store-bought food
	b) Jewelry		l) Large cooking pots
	c) Wall hangings		m) Miscellaneous
	d) Doll making		
	e) Miscellaneous	***Socialising***	a) Watching TV
			b) Playing with children
Maintenance	a) Honda		c) Visiting with family and friends
	b) Snow machine		d) Eating country food with family
	c) Boat		e) Talking on CB radio
	d) Fishing nets		f) Listening to radio station
	e) Rifle		g) Smoking/Chewing tobacco
	f) Sleds		h) Drum dancing
	g) Miscellaneous		
		Personal needs	a) Sleeping
Other	a) Using computer		b) Washing up
	b) Operating small business		c) Brushing teeth
			d) Laundry

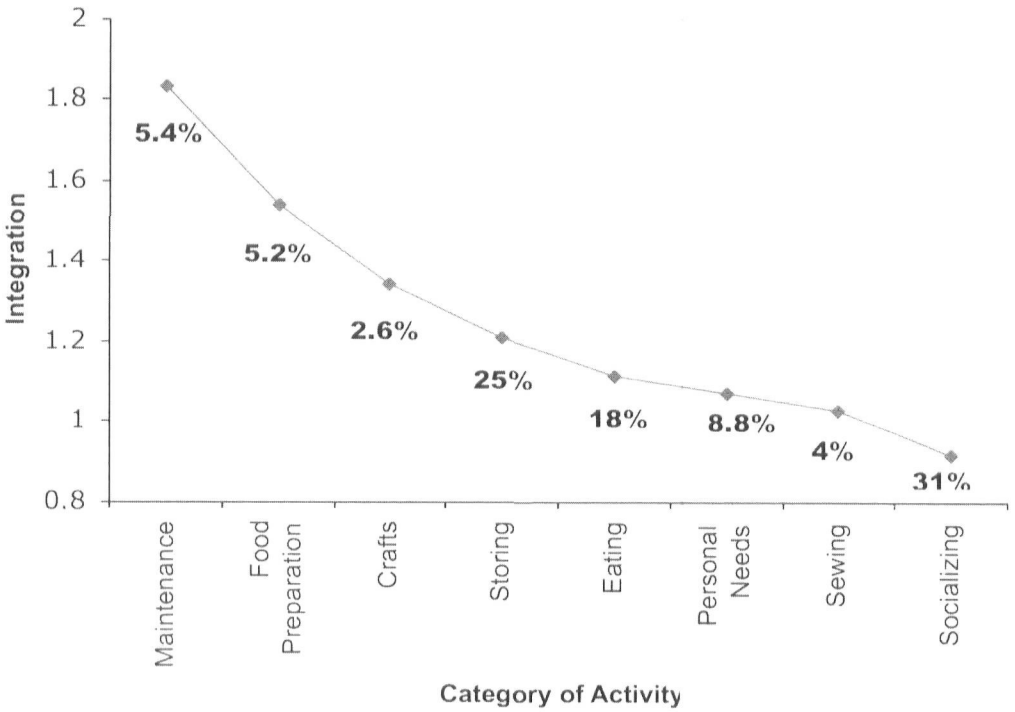

Figure 4. The spatial distribution of activity categories by integration. Activity frequencies are listed as a percentage below the trend line.

Figure 5. Socialising with family members in an Inuit home, Arviat, 2002. Photo: Peter C. Dawson.

Figure 6. Communal sleeping arrangements observed in Inuit houses. Arviat, 2002. Photo: Peter C. Dawson.

socialising activities provide opportunities to pool equipment, plan subsistence activities, and coordinate other aspects of family life.

Surprisingly, personal needs activities, such as sleeping, were also observed in integrated (*hot)* spaces (Figure 4). While not practised by all households, certain families regularly slept together in a single room, and it was not unusual to see one or two large mattresses on living room floors (Figure 6). At the same time, bedrooms were either unused, or functioned as children's play areas, storage rooms, or workshops. Inuit interviewees gave a number of explanations for this convention. Some families simply expressed a preference for sleeping together. One individual explained to me that Inuit families were stronger than southern ones, meaning that members spent a greater percentage of their time together. For this reason, she stated that her own family had slept together in a single room when her children were younger (teenagers prefer separate rooms). Now that her daughters have grown up, they continue this practice with their own young children. A second informant stated that it was easier for parents to attend to their children if they slept together, rather than apart in separate areas of the house. At first I suspected that overcrowding might explain the prevalence of communal sleeping arrangements, as this is a critical issue in many Inuit communities. However, the same forms of spatial behaviour were observed in houses occupied by single families. Communal sleeping arrangements are also quite common in hunting cabins outside of Arviat, where family members and guests typically occupy a large sleeping platform located at the rear of the cabin. These observations, combined with the sentiments expressed by many individuals about the importance of family togetherness, suggest that this practice defines cultural values that are not reflected in the compartmentalised floor plans of Euro-Canadian houses.

The importance of communalism in family life is also apparent in how traditional foods are prepared and eaten. Ideally, cooking and eating areas should not isolate people from one another as family members move through the interaction process. However, Figure 4 indicates that the preparation (skinning prey, cutting meat up for soup, stew) and consumption of traditional foods often occur in different spatial locations. This is likely due to the fact that traditional foods such as seal and caribou are too large, heavy, and messy to prepare in small Euro-Canadian style kitchens. As a result, these foods are sometimes prepared outside in tents, or on cold porches, and then brought inside and eaten communally within the kitchen (Figures 7 and 8). Because Euro-Canadian kitchens are spatially arranged to accommodate nuclear families, larger Inuit families must make space by removing furniture, and eat while seated on the floor. Qallunaat food, on the other hand, is usually eaten in smaller groups while seated at the kitchen table.

While most domestic activities have a strong socialising component built into them, others require more segregated spaces because they share certain characteristics. Carving, for example, has become an important source of income for many Inuit families. The money obtained through carving is used to purchase items such as rifles, ammunition, all terrain cycles, boats and outboards. The carving of soapstone, bone, and antler, however, is a noisy and messy activity that requires well-ventilated spaces

Figure 7. The preparation of traditional foods in an Inuit household, Arviat, 2002. Photo: Peter C. Dawson.

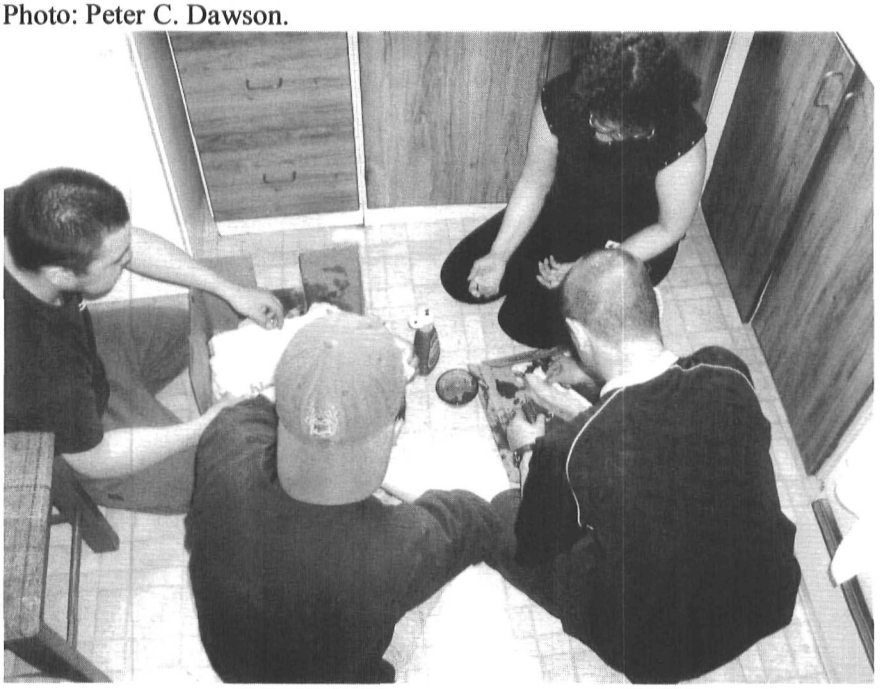

Figure 8. The consumption of traditional foods in an Inuit household, Arviat, 2002. Photo: Peter C. Dawson.

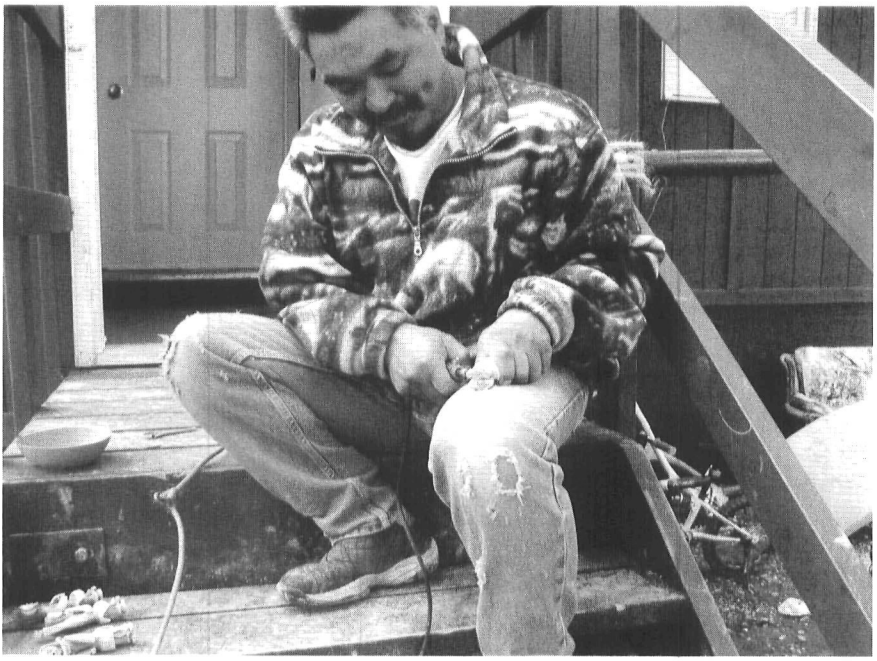

Figure 9. Carving in an Inuit home Arviat, 2002. Photo: Peter C. Dawson.

Figure 10. Storage in an Inuit home, Arviat, 2002. Photo: Peter C. Dawson.

because of the airborne dust particles it generates (Figure 9). Such debris quickly clogs furnaces, and places the health of families at risk in what are already poorly ventilated houses (Canada Mortgage and Housing Corporation 2005). For these reasons, Inuit carvers seek out segregated (*cold*) spaces where they are less likely to encounter other family members (Figure 4). In Euro-Canadian houses, these locations are typically unheated porches, or small shacks built outside of the house.

Hunting and fishing activities also require many specialised items that Euro-Canadian houses are not designed to store. Items such as hide clothing, for example, need to be kept cool in order to prevent deterioration, and are usually stored in freezers and cold porches, when possible. The lack of adequate storage space means that Inuit families are often forced to store items in locations that are less than ideal. Such items are ideally kept in segregated *(cold)* spaces where they won't interfere with other domestic activities. However, many items were stored in moderately integrated spaces because there was no other room for them (Figure 4). This often gives the homes of Inuit families a "cluttered" appearance, and impinges on the ability of the household to operate efficiently (Figure 10).

The spatial patterns identified in Figure 4 can be interpreted as tactical behaviours used by Inuit families to render their houses habitable. Inuit households appear to "lump" most of their activities into one or two highly integrated *(hot)* spaces within the house (*i.e.* living rooms, kitchens). Some families also express a preference for sleeping together in integrated areas (living rooms), leaving more segregated rooms (bedrooms) unoccupied, or used as storage or work areas. In contrast, the compartmentalised floor plans of Euro-Canadian houses, and the wide-ranging integration values they display, reflect a preference for "scattering" activities and people to specific areas of the house. Euro-Canadian families, for instance, tend to assign domestic activities to specific rooms, and sleep apart in separate areas of the dwelling. Thus, the spatial configuration of Euro-Canadian houses defines a strategy that works against the communal pattern of living, originally observed by Mauss, and expressed by many of the Inuit families in this study.

Discussion and conclusion

The disconformities between house design and space use identified in Arviat are easy to explain. Euro-Canadian houses reflect and sustain domestic practices and concepts of family life that have few parallels in Inuit society. Inuit families have endeavoured to forge a residence within them by continuing to use space in accordance with their current lifestyles and cultural values. Therefore, Mauss's contention that an essential relationship exists between house form and culture in Inuit society, each reflecting and sustaining the other, illustrates why it is necessary to include cultural factors when developing northern aboriginal housing policy.

It must be acknowledged that the results of this study are based on a number of assumptions. The activities recorded, for example, come from a relatively small sample

of families living in a single arctic community. It is possible that Inuit families living in larger, more acculturated communities, such as Rankin Inlet, might use space in more Western ways. Fieldwork was also undertaken for a short time period (three months) during the summer months, when Inuit families engage in activities that differ from those practised during the winter. Consequently, plans are currently underway to initiate a larger year-long program of research involving other Inuit communities, at different levels of acculturation, to address these issues, and widen the scope of this study. Interviews are also planned for future fieldwork, so that Inuit perspectives on housing and community living can be taken into account.

The results of this project illustrate how people re-appropriate "things" in their everyday lives in order to make them their own. The local knowledge acquired through this research, therefore, provides some guidance for the development of new housing policy in the Canadian Arctic. For instance, rooms should be connected together in ways that raise the integration values of spaces, conserve lines of sight, and generate wider fields of view. Integrated *(hot)* spaces such as living rooms and kitchens should be enlarged to better accommodate the social nature of these locations. Floor plans should also be laid out in ways that are more suited to traditional cooking practices and communal meal arrangements. Finally, storage solutions and work areas (segregated *cold* spaces) need to be incorporated into house designs to address the unique economic practices of Inuit families.

When people design houses for others, as is often the case with government modernisation programs, the relationship between house form and culture is frequently forgotten, and local knowledge ignored. The consequences of such actions are profound, and can both disrupt family life and reduce the life expectancy of housing stock. During the course of this study, for example, I observed many instances where houses were damaged because they had been inadequately designed for a particular activity. By way of illustration, the preparation of traditional food frequently damages countertops and floors because they are not designed for heavy chopping and cutting. Similarly, cooking caribou and seal meat in large pots of boiling water releases large amounts of condensation into the home, causing rot and mould. Given that housing shortages are a critical issue in many indigenous communities throughout Canada, it is essential that architects and planners explore ways to design houses that are more culturally sustaining. When *Seasonal Variations of the Eskimo* was first published in 1906, the introduction of government sponsored housing programs in the Canadian Arctic was still many decades away. The insightful observations it contains, however, played a key role in stimulating my research into the effects of Euro-Canadian housing on Inuit families. This is one of many ways that Mauss's work continues to influence those of us studying the Inuit way of life in the 21st century.

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